What is claimed is:

1. A method for registering identifications (IDs) of transmitters associated with respective tires of its own vehicle to a memory of a pneumatic tire pressure monitoring apparatus provided in a vehicle body, comprising the steps of:

causing each transmitter to transmit variable data of an associated tire together with an ID assigned to said each transmitter, said variable data varying between a moment said vehicle is traveling and a moment said vehicle is stopped;

causing said pneumatic tire pressure monitoring apparatus to receive said variable data;

inputting traveling condition specifying data which specifies traveling conditions of said vehicle;

identifying IDs assigned to the transmitters of respective tires actually installed on vehicle wheels based on said variable data and the traveling condition specifying data; and

registering said identified IDs into said memory of the pneumatic tire pressure monitoring apparatus.

2. The transmitter ID registering method in accordance with claim 1, wherein said variable data of the associated tire include at least one of temperature and pressure of said associated tire.

3. The transmitter ID registering method in accordance with claim 1, wherein said traveling condition specifying data include at least one of traveling speed and acceleration of said vehicle.

4. The transmitter ID registering method in accordance with claim 1, wherein said step of identifying IDs assigned to the transmitters of the tires actually installed on the vehicle wheels is executed after a predetermined time has elapsed since said vehicle started traveling.

5. A method for identifying transmitters associated with respective tires actually installed on vehicle wheels of its own vehicle among a plurality of transmitters prepared for tires of said vehicle, comprising the steps of:

causing each transmitter to transmit variable data of an associated tire together with an identification (ID) assigned to said each transmitter, said variable data varying between a moment said vehicle is traveling and a moment said vehicle is stopped;

causing a receiver provided in a vehicle body to receive said variable data and said ID;

inputting traveling condition specifying data which specifies traveling conditions of said vehicle; and

identifying the transmitters associated with the tires actually installed on the vehicle wheels based on said variable data and said ID as well as based on said traveling condition specifying data.

6. The transmitter identifying method in accordance with claim 5, wherein said variable data of the associated tire include at least one of temperature and pressure of said associated tire.

7. The transmitter identifying method in accordance with claim 5, wherein said traveling condition specifying data include at least one of traveling speed and acceleration of said vehicle.

8. A system for registering identifications (IDs) of transmitters associated with respective tires of a vehicle to a memory of a pneumatic tire pressure monitoring apparatus provided in a vehicle body, comprising:

variable data transmitting means, provided in said each transmitter, for transmitting variable data of the associated tire together with an ID assigned to said each transmitter, said variable data varying between a moment said vehicle is traveling and a moment said vehicle is stopped;

variable data receiving means for receiving a signal carrying said variable data transmitted from said variable data transmitting means;

traveling condition specifying data inputting means for inputting traveling condition specifying data which specifies traveling conditions of said vehicle;

ID identifying means for identifying IDs assigned to the transmitters of respective tires actually installed on vehicle wheels based on the signal received by said variable data receiving means and the traveling condition specifying data entered by said traveling condition specifying data inputting means; and

ID registering means for registering said IDs identified by said ID identifying means into said memory of the pneumatic tire pressure monitoring apparatus.

9. The transmitter ID registering system in accordance with claim 8, wherein said variable data of the associated tire include at least one of temperature and pressure of said associated tire.

10. The transmitter ID registering system in accordance with claim 8, wherein said traveling condition specifying data include at least one of traveling speed and acceleration of said vehicle.

11. The transmitter ID registering system in accordance with claim 8, wherein said ID identifying means executes the processing of identifying IDs assigned to the transmitters of the tires actually installed on the vehicle wheels after a predetermined time has elapsed since said vehicle started traveling.

12. A system for identifying transmitters associated with respective tires actually installed on vehicle wheels of its own vehicle among a plurality of transmitters prepared for tires of said vehicle, comprising:

variable data transmitting means, provided in each transmitter, for

transmitting variable data of an associated tire together with an identification (ID) assigned to said each transmitter, said variable data varying between a moment said vehicle is traveling and a moment said vehicle is stopped;

variable data receiving means for receiving a signal carrying said variable data transmitted from said variable data transmitting means;

traveling condition specifying data inputting means for inputting traveling condition specifying data which specifies traveling conditions of said vehicle; and

transmitter identifying means for identifying the transmitters associated with the tires actually installed on the vehicle wheels based on the signal received by said variable data receiving means and the traveling condition specifying data entered by said traveling condition specifying data inputting means.

13. The transmitter identifying system in accordance with claim 12, wherein said variable data of the associated tire include at least one of temperature and pressure of said associated tire.

14. The transmitter identifying system in accordance with claim 12, wherein said traveling condition specifying data include at least one of traveling speed and acceleration of said vehicle.

15. A pneumatic tire pressure monitoring system comprising:

a plurality of transmitters each detecting an air pressure of an associated tire and transmitting the detected air pressure together with an identification (ID) assigned to each transmitter;

a memory for registering IDs assigned to transmitters of respective tires actually installed on vehicle wheels of its own vehicle;

a receiver for receiving a signal transmitted from said each transmitter, judging whether or not the received signal originates from any one of the transmitters associated with the tires actually installed on the vehicle wheels by comparing the ID contained in the received signal with said IDs

registered in said memory, judging whether or not there is any abnormality occurring in the air pressure when said received signal originates from any one of the transmitters associated with the tires actually installed on the vehicle wheels, and generating a warning when any abnormality occurs in the air pressure of the tires actually installed on the vehicle wheels;

variable data transmitting means, provided in said each transmitter, for transmitting variable data of the associated tire together with the ID assigned to said each transmitter, said variable data varying between a moment said vehicle is traveling and a moment said vehicle is stopped;

variable data receiving means for receiving a signal carrying said variable data transmitted from said variable data transmitting means;

traveling condition specifying data inputting means for inputting traveling condition specifying data which specifies traveling conditions of said vehicle;

ID identifying means for identifying IDs assigned to the transmitters of the tires actually installed on the vehicle wheels based on the signal received by said variable data receiving means and the traveling condition specifying data entered by said traveling condition specifying data inputting means; and

ID registering means for registering said IDs identified by said ID identifying means into said memory.

16. The pneumatic tire pressure monitoring system in accordance with claim 15, wherein

said ID identifying means identifies said IDs as being assigned to the transmitters of the tires actually installed on the vehicle wheels when the variable data received by said variable data receiving means are obtainable in a traveling condition corresponding to said traveling condition specifying data entered by said traveling condition specifying data inputting means,

said pneumatic tire pressure monitoring system further comprises:

provisional ID registering means for registering the ID contained in the signal received by said variable data receiving means as a provisional ID

when said vehicle is stopped;

provisional ID deleting means for deleting said provisional ID in a case that said provisional ID disagrees with the IDs assigned to the transmitters of the tires actually installed on the vehicle wheels, according to judgment of said ID identifying means which is activated when the ID contained in the signal received by said variable data receiving means agrees with said provisional ID registered in said provisional ID registering means in a traveling condition of the vehicle; and

provisional ID number judging means for judging whether or not a predetermined number of provisional IDs are present,

wherein said ID registering means registers said predetermined number of provisional IDs as authorized IDs into said memory, when the presence of said predetermined number of provisional IDs is recognized by said provisional ID number judging means.

17. The pneumatic tire pressure monitoring system in accordance with claim 15, further comprising additional provisional ID deleting means for:

judging whether or not the variable data received by said variable data receiving means agree with data obtainable in a traveling condition of the vehicle when the ID received by said variable data receiving means agrees with said provisional ID registered by said provisional ID registering means in the traveling condition of the vehicle;

counting the frequency in receiving said provisional ID during the traveling condition of the vehicle, when judged as the variable data received by said variable data receiving means disagree with the data obtainable in the traveling condition of the vehicle; and

deleting said provisional ID when a counting value reaches a predetermined number.

18. The pneumatic tire pressure monitoring system in accordance with claim 16, further comprising:

provisional ID weighting means for activating said ID identifying

means when the ID contained in the signal received by said variable data receiving means agrees with said provisional ID registered by said provisional ID registering means in the traveling condition of the vehicle, and increasing a priority order of the provisional ID for authorized registration when said ID specifying means can identify said provisional ID as being assigned to one of the transmitters of the tires actually installed on the vehicle wheels; and

elapsed time judging means for judging whether or not a predetermined time has elapsed since said vehicle started traveling, when the presence of said predetermined number of provisional IDs is recognized by said provisional ID number judging means,

wherein said ID registering means registers a plurality of provisional IDs as authorized IDs into said memory considering said priority order as much as a total number of the tires actually installed on the vehicle wheels, when elapse of said predetermined time is recognized by said elapsed time judging means.

19. A pneumatic tire pressure monitoring system comprising:

a plurality of transmitters each detecting an air pressure of an associated tire and transmitting the detected air pressure together with an identification (ID) assigned to each transmitter;

a memory for registering IDs assigned to transmitters of respective tires actually installed on vehicle wheels of its own vehicle;

a receiver for receiving a signal transmitted from said each transmitter, judging whether or not the received signal originates from any one of the transmitters associated with the tires actually installed on the vehicle wheels by comparing the ID contained in the received signal with said IDs registered in said memory, judging whether or not there is any abnormality occurring in the air pressure when said received signal originates from any one of the transmitters associated with the tires actually installed on the vehicle wheels, and generating a warning when any abnormality occurs in the air pressure of the tires actually installed on the vehicle wheels;

variable data transmitting means, provided in said each transmitter, for transmitting variable data of the associated tire together with the ID assigned to said each transmitter, said variable data varying between a moment said vehicle is traveling and a moment said vehicle is stopped;

variable data receiving means for receiving a signal carrying said variable data transmitted from said variable data transmitting means;

traveling condition specifying data inputting means for inputting traveling condition specifying data which specifies traveling conditions of said vehicle; and

transmitter identifying means for identifying the transmitters of the tires actually installed on the vehicle wheels based on the signal received by said variable data receiving means and the traveling condition specifying data entered by said traveling condition specifying data inputting means.

20. The pneumatic tire pressure monitoring system in accordance with claim 19, further comprising excluding means for activating said transmitter identifying means when the ID contained in the signal received by said variable data receiving means agrees with any one of said IDs registered in said memory, and excluding said ID contained in the received signal from objectives of warning performed by said receiver when the variable data received by said variable data receiving means disagree with data obtainable in a traveling condition of the vehicle corresponding to the traveling condition specifying data entered by said traveling condition specifying data input means.

21. The pneumatic tire pressure monitoring system in accordance with claim 19, further comprising setting means for activating said transmitter identifying means when the ID contained in the signal received by said variable data receiving means agrees with any one of said IDs registered in said memory, and setting said ID contained in the received signal as an objective of warning performed by said receiver when the variable data received by said variable data receiving means agree with data obtainable in

a traveling condition of the vehicle corresponding to the traveling condition specifying data entered by said traveling condition specifying data input means.

22. The pneumatic tire pressure monitoring system in accordance with claim 15, wherein said variable data of the associated tire include at least one of temperature and pressure of said associated tire.

23. The pneumatic tire pressure monitoring system in accordance with claim 15, wherein said traveling condition specifying data include at least one of traveling speed and acceleration of said vehicle.

24. A pneumatic tire pressure monitoring apparatus comprising:

receiving means for receiving air-pressure data and an identification (ID) transmitted from transmitters associated with respective tires of its own vehicle;

a memory for registering identifications (IDs) assigned to transmitters of respective tires belonging to said vehicle;

control means for identifying air-pressure data of the tires belonging to said vehicle by comparing the ID received by said receiving means with the IDs registered in said memory, judging whether or not there is any abnormality occurring in the air pressure of the respective tires belonging to said vehicle based on said identified air-pressure data, and generating a warning when any abnormality occurs in the air pressure of the tires belonging to said vehicle;

variable data receiving means for receiving a signal carrying variable data and ID transmitted from said transmitters, said variable data varying between a moment said vehicle is traveling and a moment said vehicle is stopped;

traveling condition specifying data inputting means for inputting traveling condition specifying data which specifies traveling conditions of said vehicle;

ID identifying means for identifying IDs assigned to the transmitters of the tires actually installed on vehicle wheels based on the signal received by said variable data receiving means and the traveling condition specifying data entered by said traveling condition specifying data inputting means; and

ID registering means for registering said IDs identified by said ID identifying means into said memory.

25. The pneumatic tire pressure monitoring apparatus in accordance with claim 24, wherein

said ID identifying means identifies the ID contained in the signal received by said variable data receiving means as one of the IDs assigned to the transmitters of the tires actually installed on the vehicle wheels, when the variable data received by said variable data receiving means agree with data obtainable in a traveling condition of the vehicle corresponding to the traveling condition specifying data entered by said traveling condition specifying data input means,

said pneumatic tire pressure monitoring apparatus further comprises:

provisional ID registering means for registering the ID contained in the signal received by said variable data receiving means as a provisional ID when said vehicle is stopped;

provisional ID deleting means for deleting said provisional ID in a case that said provisional ID disagrees with the IDs assigned to the transmitters of the tires actually installed on the vehicle wheels, according to judgment of said ID identifying means which is activated when the ID contained in the signal received by said variable data receiving means agrees with said provisional ID registered in said provisional ID registering means in a traveling condition of the vehicle; and

provisional ID number judging means for judging whether or not a predetermined number of provisional IDs are present,

wherein said ID registering means registers said predetermined number of provisional IDs as authorized IDs into said memory, when the presence of said predetermined number of provisional IDs is recognized by

said provisional ID number judging means.

26. The pneumatic tire pressure monitoring system in accordance with claim 24, further comprising additional provisional ID deleting means for:

judging whether or not the variable data received by said variable data receiving means agree with data obtainable in a traveling condition of the vehicle when the ID contained in the signal received by said variable data receiving means agrees with said provisional ID registered by said provisional ID registering means in the traveling condition of the vehicle;

counting the frequency in receiving said provisional ID during the traveling condition of the vehicle, when judged as the variable data received by said variable data receiving means disagree with the data obtainable in the traveling condition of the vehicle; and

deleting said provisional ID when a counting value reaches a predetermined number.

27. The pneumatic tire pressure monitoring system in accordance with claim 24, further comprising:

provisional ID weighting means for activating said ID identifying means when the ID contained in the signal received by said variable data receiving means agrees with said provisional ID registered by said provisional ID registering means in the traveling condition of the vehicle, and increasing a priority order of the provisional ID for authorized registration when said ID specifying means identified said provisional ID as being assigned to one of the transmitters of the tires actually installed on the vehicle wheels; and

elapsed time judging means for judging whether or not a predetermined time has elapsed since said vehicle started traveling, when the presence of said predetermined number of provisional IDs is recognized by said provisional ID number judging means,

wherein said ID registering means registers a plurality of provisional IDs as authorized IDs into said memory considering said priority order as

much as a total number of the tires actually installed on the vehicle wheels, when elapse of said predetermined time is recognized by said elapsed time judging means.

28. A pneumatic tire pressure monitoring apparatus comprising:

receiving means for receiving air-pressure data and identification (ID) transmitted from transmitters associated with respective tires of its own vehicle;

a memory for registering IDs assigned to transmitters of respective tires belonging to said vehicle;

control means for identifying air-pressure data of the tires belonging to said vehicle by comparing the ID received by said receiving means with the IDs registered in said memory; judging whether or not there is any abnormality occurring in the air pressure of the respective tires belonging to said vehicle based on said identified air-pressure data, and generating a warning when any abnormality occurs in the air pressure of the tires belonging to said vehicle;

variable data receiving means for receiving a signal carrying variable data and ID transmitted from said transmitters, said variable data varying between a moment said vehicle is traveling and a moment said vehicle is stopped;

traveling condition specifying data inputting means for inputting traveling condition specifying data which specifies traveling conditions of said vehicle; and

transmitter identifying means for identifying the transmitters of the tires actually installed on the vehicle wheels based on the signal received by said variable data receiving means and the traveling condition specifying data entered by said traveling condition specifying data inputting means.

29. The pneumatic tire pressure monitoring system in accordance with claim 28, further comprising excluding means for activating said transmitter identifying means when the ID contained in the signal received by said

variable data receiving means agrees with any one of said IDs registered in said memory, and excluding said ID contained in the received signal from objectives of warning performed by said control means when the variable data received by said variable data receiving means disagree with data obtainable in a traveling condition of the vehicle corresponding to the traveling condition specifying data entered by said traveling condition specifying data input means.

30. The pneumatic tire pressure monitoring system in accordance with claim 28, further comprising setting means for activating said transmitter identifying means when the ID contained in the signal received by said variable data receiving means agrees with any one of said IDs registered in said memory, and setting said ID contained in the received signal as an objective of warning performed by said control means when the variable data received by said variable data receiving means agree with data obtainable in a traveling condition of the vehicle corresponding to the traveling condition specifying data entered by said traveling condition specifying data input means.

31. The pneumatic tire pressure monitoring system in accordance with claim 24, wherein said variable data include at least one of temperature and pressure of said associated tire.

32. The pneumatic tire pressure monitoring system in accordance with claim 24, wherein said traveling condition specifying data include at least one of traveling speed and acceleration of said vehicle.

33. A program executed in a computer constituting a control unit of a pneumatic tire pressure monitoring apparatus for monitoring the air pressure of tires belonging to its own vehicle based on signals transmitted from transmitters associated with said tires, comprising:

a receiving step of receiving a signal from each transmitter;

an identification (ID) checking step of judging whether or not an ID contained in the signal received from said each transmitter agrees with an already registered ID, when the signal from said each transmitter is received in said receiving step;

an air-pressure judging step of judging whether or not there in any abnormality in an air pressure of a tire equipped with said each transmitter based on air-pressure data contained in the signal received from said each transmitter, when agreement between the ID contained in the signal received from said each transmitter and said already registered ID is recognized in said ID checking step;

a warning step of executing a predetermined warning operation, when any abnormality in the air pressure of the tire equipped with said each transmitter is found in said air-pressure judging step;

a stopping condition judging step of judging whether or not the vehicle is stopped, when disagreement between the ID contained in the received signal and said already registered ID is recognized in said ID checking step;

a provisional ID registering step of registering the ID being judged as disagreeing with said already registered ID in said ID checking step as a provisional ID, when stoppage of said vehicle is recognized in said stopping condition judging step;

a provisional ID judging step of judging whether or not the ID contained in the received signal agrees with said provisional ID, when traveling of said vehicle is recognized in said stopping condition judging step;

an increasing pattern judging step of judging whether or not at least one of pressure and temperature data contained in said received signal is in an increasing pattern, when agreement between the ID contained in the received signal and said provisional ID is recognized in said provisional ID judging step;

a traveling pattern agreement judging step of judging whether or not said at least one of pressure and temperature data contained in said received

signal agrees with an increasing pattern of at least one of temperature and pressure in a present traveling pattern of the vehicle, when the increasing pattern is recognized in said increasing pattern judging step;

a provisional ID number judging step of judging whether or not the number of provisional IDs agrees with a total number of said tires of the vehicle, when agreement between said at least one of pressure and temperature data contained in said received signal and the increasing pattern of at least one of temperature and pressure in the present traveling pattern of the vehicle is recognized in said traveling pattern agreement judging step; and

an authorized ID registering step of registering said provisional IDs as authorized IDs, when agreement between the number of said provisional IDs and the total number of said tires of the vehicle is recognized in said provisional ID number judging step.

34. The pneumatic tire pressure monitoring program in accordance with claim 33, further comprising:

weighting step of increasing a priority order of the provisional ID for authorized registration, when agreement between said at least one of pressure and temperature data contained in said received signal and the increasing pattern of at least one of temperature and pressure in the present traveling pattern of the vehicle is recognized in said traveling pattern agreement judging step; and

elapsed time judging step of judging whether or not a predetermined time has elapsed since the vehicle started traveling, when disagreement between the number of said provisional IDs and the total number of said tires of the vehicle is recognized in said provisional ID number judging step,

wherein said authorized ID registering step includes a step of registering a plurality of provisional IDs as authorized IDs considering said priority order as much as a total number of tires actually installed on the vehicle wheels, when elapse of said predetermined time is recognized by said elapsed time judging step.

35. A program executed in a computer constituting a control unit of a pneumatic tire pressure monitoring apparatus for monitoring the air pressure of tires belonging to its own vehicle based on signals transmitted from transmitters associated with said tires, comprising:

a receiving step of receiving a signal from each transmitter;

an identification (ID) checking step of judging whether or not an ID contained in the signal received from said each transmitter agrees with an already registered ID, when the signal from said each transmitter is received in said receiving step;

an air-pressure judging step of judging whether or not there in any abnormality in an air pressure of a tire equipped with said each transmitter based on air-pressure data contained in the signal received from said each transmitter, when agreement between the ID contained in the signal received from said each transmitter and said already registered ID is recognized in said ID checking step;

a warning step of executing a predetermined warning operation, when any abnormality in the air pressure of the tire equipped with said each transmitter is found in said air-pressure judging step;

a traveling condition judging step of judging whether or not the vehicle is traveling, when disagreement between the ID contained in the received signal and said already registered ID is recognized in said ID checking step;

an increasing pattern judging step of judging whether or not at least one of pressure and temperature data contained in said received signal is in an increasing pattern, when traveling of said vehicle is recognized in said traveling condition judging step; and

a warning objective excluding step of excluding said ID contained in the received signal from warning objectives in said warning step, when no increasing pattern of at least one of pressure and temperature data contained in said received signal is recognized in said increasing pattern judging step.

36. The pneumatic tire pressure monitoring program in accordance with claim 35, further comprising:

a pattern agreement judging step of executing said increasing pattern judging step when the ID contained in said received signal agrees with said already registered ID, and judging whether or not said at least one of pressure and temperature data contained in said received signal agrees with an increasing pattern of at least one of temperature and pressure in a present traveling pattern of the vehicle, when the increasing pattern is recognized in said at least one of pressure and temperature data contained in said received signal; and

a warning object setting step of setting said ID contained in the received signal as one of warning objectives in said warning step, when said at least one of pressure and temperature data contained in said received signal agrees with the increasing pattern of at least one of temperature and pressure in the present traveling pattern of the vehicle.

37. The pneumatic tire pressure monitoring system in accordance with claim 19, wherein said variable data of the associated tire include at least one of temperature and pressure of said associated tire.

38. The pneumatic tire pressure monitoring system in accordance with claim 19, wherein said traveling condition specifying data include at least one of traveling speed and acceleration of said vehicle.

39. The pneumatic tire pressure monitoring system in accordance with claim 28, wherein said variable data include at least one of temperature and pressure of said associated tire.

40. The pneumatic tire pressure monitoring system in accordance with claim 28, wherein said traveling condition specifying data include at least one of traveling speed and acceleration of said vehicle.